

IN THE CLAIMS:

Please amend claims 21-25, 27-29, 31, and 32 herein. Please cancel claim 30 without prejudice or disclaimer. Please note that all claims currently pending and under consideration in the above-referenced application are shown below. Please enter these claims as amended. This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claims 1-20 (Canceled)

21. (Currently amended) A method of separating cesium and strontium from an acidic solution, comprising:

~~providing an acidic solution comprising cesium and strontium;~~

contacting ~~the~~an acidic solution comprising cesium and strontium with a mixed extractant solvent consisting ~~essentially~~ of calix[4]arene-bis-(tert-octylbenzo)-crown-6 (“BOBCalixC6”), 4',4',(5')-di-(t-butylidicyclo-hexano)-18-crown-6 (“DtBu18C6”), and 1-(2,2,3,3-tetrafluoropropoxy)-3-(4-sec-butylphenoxy)-2-propanol (“Cs-7SB”) dissolved in a diluent; and

removing the cesium and strontium from the acidic solution.

22. (Currently amended) The method of claim 21, wherein ~~providing an acidic solution comprising cesium and strontium~~ contacting an acidic solution comprising cesium and strontium with a mixed extractant solvent comprises providing the acidic solution comprising from approximately 0.5M to approximately 3M nitric acid.

23. (Currently amended) The method of claim 21, wherein contacting ~~the~~an acidic solution comprising cesium and strontium with a mixed solvent extractant comprises contacting the acidic solution with the mixed extractant solvent comprising from approximately 0.0025M to approximately 0.025M BOBCalixC6.

24. (Currently amended) The method of claim 21, wherein contacting ~~the~~an acidic solution comprising cesium and strontium with a mixed solvent extractant comprises contacting the acidic solution with the mixed extractant solvent comprising from approximately 0.01M to approximately 0.5M DtBu18C6.

25. (Currently amended) The method of claim 21, wherein contacting ~~the~~an acidic solution comprising cesium and strontium with a mixed solvent extractant comprises contacting the acidic solution with the mixed extractant solvent comprising from approximately 0.086 M to approximately 0.108 M DtBu18C6.

Claim 26 (Canceled)

27. (Currently amended) The method of claim 21, wherein contacting ~~the~~an acidic solution comprising cesium and strontium with a mixed solvent extractant comprises contacting the acidic solution with the mixed extractant solvent comprising from approximately 0.2M to approximately 1.0M Cs-7SB.

28. (Currently amended) The method of claim 21, wherein contacting ~~the~~an acidic solution comprising cesium and strontium with a mixed solvent extractant comprises contacting the acidic solution with the mixed extractant solvent comprising a diluent that includes an isoparaffinic hydrocarbon.

29. (Currently amended) The method of claim 21, wherein contacting ~~the~~an acidic solution comprising cesium and strontium with a mixed solvent extractant comprises contacting the acidic solution with the mixed extractant solvent consisting ~~essentially~~ of approximately 0.15M DtBu18C6, approximately 0.007M BOBCalixC6, and approximately 0.75M Cs-7SB modifier dissolved in an isoparaffinic hydrocarbon diluent.

Claim 30 (Canceled)

31. (Currently amended) The method of claim 21, wherein contacting ~~the~~an acidic solution comprising cesium and strontium with a mixed extractant solvent comprises forming a first organic phase and a first aqueous phase.

32. (Currently amended) The method of claim 21, wherein contacting ~~the~~an acidic solution comprising cesium and strontium with a mixed extractant solvent comprises extracting the cesium and strontium into a first organic phase.

33. (Original) The method of claim 21, wherein removing the cesium and strontium from the acidic solution comprises separating a first organic phase and a first aqueous phase.

34. (Original) The method of claim 21, wherein removing the cesium and strontium from the acidic solution comprises removing the cesium and strontium at a temperature ranging from approximately 1°C to approximately 40°C.

35. (Original) The method of claim 21, wherein removing the cesium and strontium from the acidic solution comprises removing the cesium and strontium at a temperature ranging from approximately 10°C to approximately 15°C.

36. (Original) The method of claim 21, further comprising recovering the mixed extractant solvent, the cesium, and the strontium.

37. (Original) The method of claim 36, wherein recovering the mixed extractant solvent, the cesium, and the strontium comprises contacting a first organic phase with a second aqueous phase.

38. (Original) The method of claim 37, wherein contacting a first organic phase with a second aqueous phase comprises extracting the cesium and strontium into the second aqueous phase.

39. (Original) The method of claim 37, wherein contacting a first organic phase with a second aqueous phase comprises contacting the first organic phase with the second aqueous phase at a temperature ranging from approximately 10°C to approximately 60°C.

40. (Original) The method of claim 37, wherein contacting a first organic phase with a second aqueous phase comprises contacting the first organic phase with the second aqueous phase at a temperature ranging from approximately 20°C to approximately 40°C.

41. (Original) The method of claim 37, wherein contacting a first organic phase with a second aqueous phase comprises contacting the first organic phase with an aqueous solution comprising from approximately 0.001M nitric acid to approximately 0.5M nitric acid.

42. (Original) The method of claim 36, wherein recovering the mixed extractant solvent, the cesium, and the strontium comprises separating a first organic phase and a second aqueous phase.

43. (Original) A method of extracting strontium, comprising:
contacting an acidic solution comprising strontium with a solvent comprising 4',4',(5')-di-(t-butyl)dicyclo-hexano)-18-crown-6 ("DtBu18C6"), 1-(2,2,3,3-tetrafluoropropoxy)-3-(4-sec-butylphenoxy)-2-propanol ("Cs-7SB"), and an isoparaffinic hydrocarbon.